



# innoapps

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*IoT Solutions*

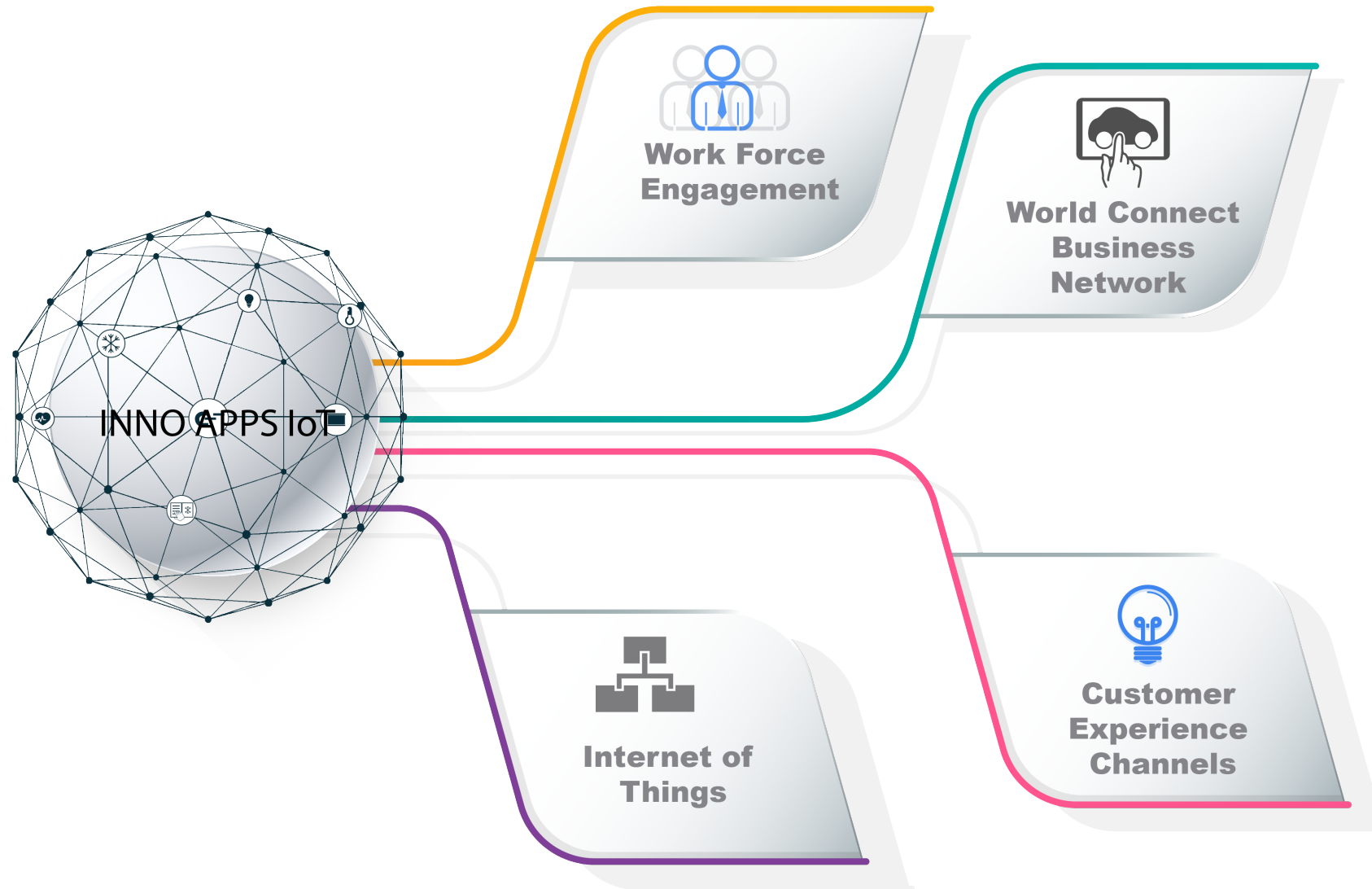
It's time **for IoT**

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# The Internet of Things – Pillar of INNO APPS

# Digitization – Connect world on IoT platform



… IoT is the pillar for a digital world

INNO APPS IoT Connects things  
with people and processes...



# INNO APPS IoT connects with people and processes...

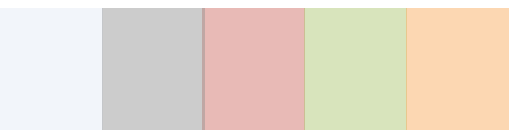
INNO APPS provides a highly innovative IoT solution portfolio which extends the digital core with adaptive applications, big data management and connectivity to enable;

- ✧ New Business Processes
- ✧ New Business Models



# INNO APPS IoT innovation : From things to outcomes

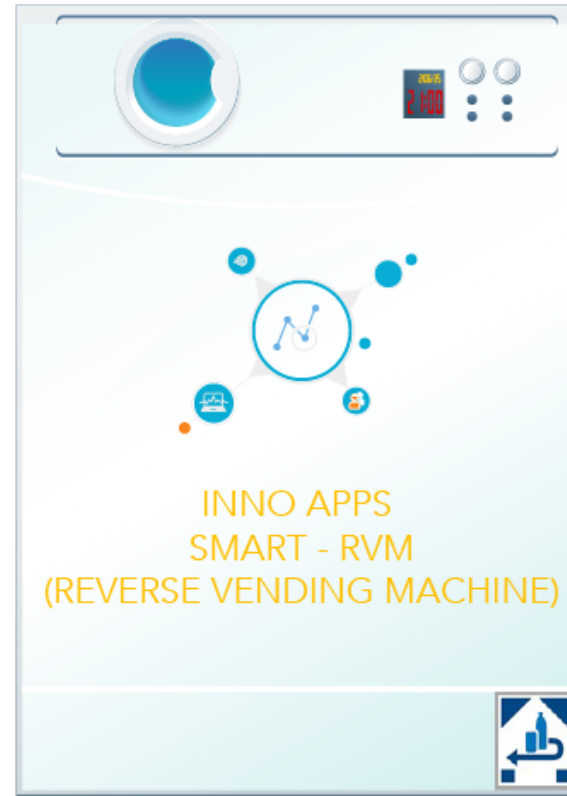




# Thinking about IoT in Environment protection

# Smart – RVM (Reverse Vending Machine)

*Innovative and environmental friendly  
garbage collection solutions – Smart Cities*





# What is Smart – RVM ?

A Smart - reverse vending machine is a machine where people can return empty plastic containers like bottles for recycling. The machine often gives back a deposit or allocate redeem points / refund amount to the end user. This is what makes it a “reverse” vending machine: instead of the user putting in money and getting out a product (like at a candy vending machine), the user puts a product in and gets out a monetary value.

Reverse vending systems are an automated way to collect, sort and handle the return of used plastic containers. The first fully-automated reverse vending machine was designed by INNO APPS. Reverse vending machines are especially common in regions with container deposit laws (where you get money back for returning certain containers) or mandatory recycling legislation.

The name of SMART reverse vending machines is sometimes shortened to RVMs. They are also known as redeem machines, recycling returns machines, or can and bottle recycling machines.



# How does a Smart – RVM ?



**1:** Insert your empty plastic bottles into the chute at the front of the reverse vending machine.



**2:** When user finished inserting bottles, tap the button at the front of the machine. Machines will display summary of items. Machine will calculate redeem points.



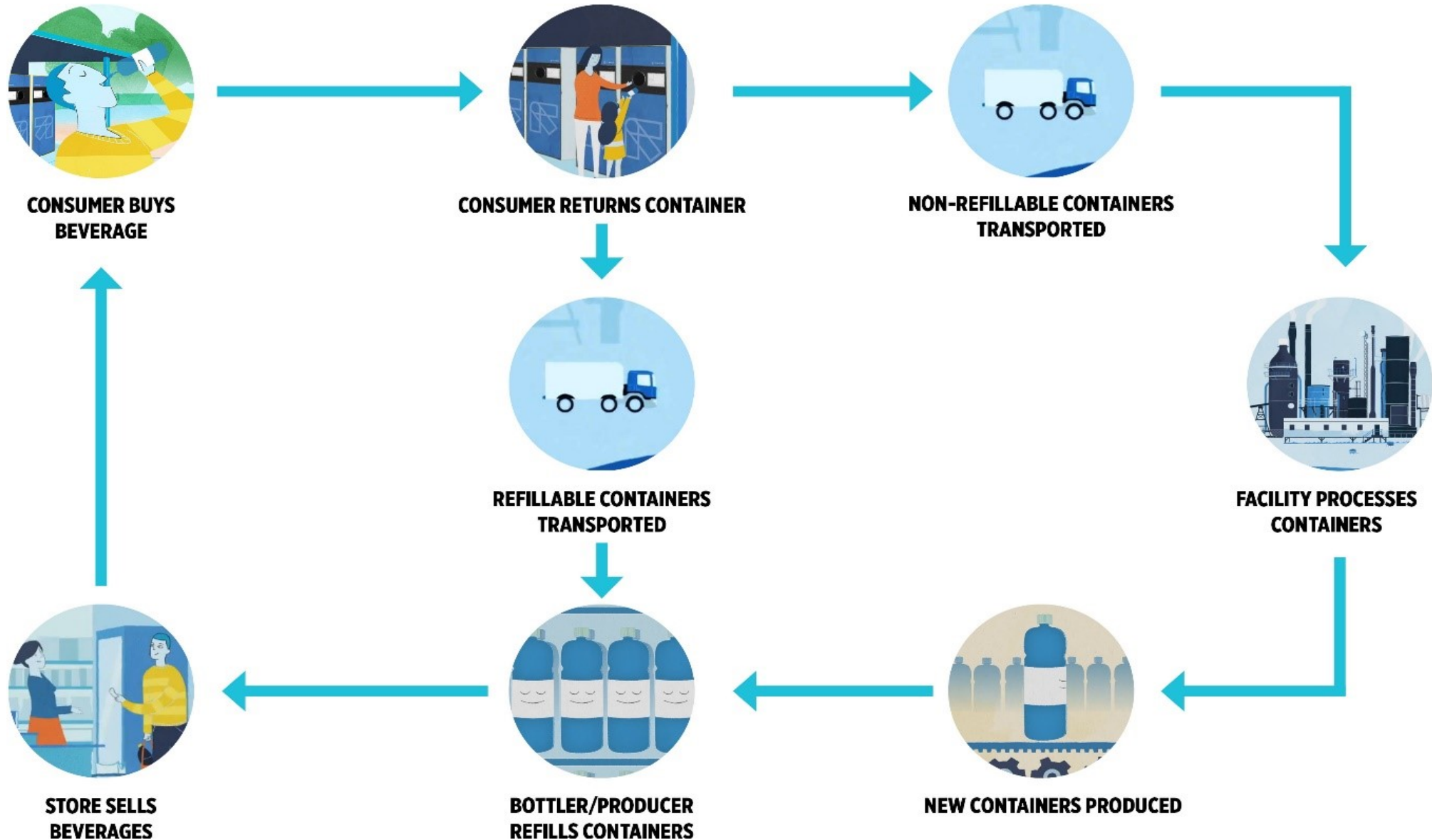
**3:** Take the receipt that the machine prints out. (In regions with container deposit laws, the receipt shows the value of your recycling refund, which can usually be redeemed at the cash register.)



# How does a Smart – RVM ?

As user insert plastic containers, the SMART – RVM will scan the containers' barcodes if available, materials or shapes, weight and length to identify the type of packaging and give the correct deposit refund / allocate redeem points. The machine will then sort the containers into different types. Depending on the containers in users region, refillable containers are moved to one storage area in the machine, while containers that can't be refilled are crushed and stored in different bins.

# What happens to a bottle when it is recycled ?





# Better environment use SMART - RVM

Reverse vending machines are a key part of container deposit systems, which see 70% to almost 100% of all plastic containers returned for recycling. No other waste collection system comes even close to beating it! Reverse vending machines benefit the environment, end users and the sites collecting bottles and cans for recycling.



## Better Environment !

- Recycle Plastic Material
- Ensure clean, quality materials that can be used again and again to make new containers.
- Reduce need for raw materials in making more containers, and need for landfills.
- Keeps litter and waste out of groundwater, oceans and streets.



## Convenient for end users:

- Are often located at grocery retail stores, making it convenient to return containers for recycling.
- Are fast and clean, so recycling is more enjoyable.
- Offer a personal rewards program at SMART \_ RVM machines, where consumers earn points for the containers they deposit, to redeem for rewards or donate to charity.
- Get recyclers engaged in shaping a better environment.



## Efficient for business:

- Make recycling collection cleaner and streamlined.
- Reduce time and mess of staff manually handling and counting containers.
- Let staff focus on other tasks.
- Ensure recycling stations take up less physical space on site.
- Give more storage capacity with compaction and reduces transport needs for containers.
- Are easy for operators to handle, clean and maintain.



# Smart – RVM Unit

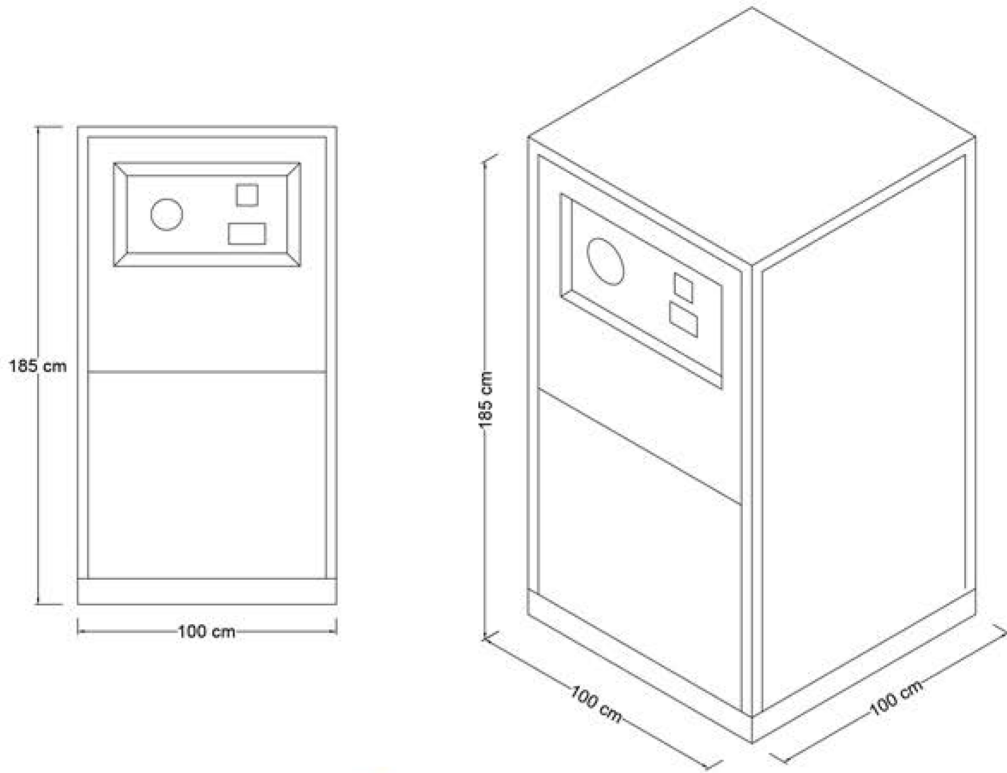
AN INTELLIGENT PLASTIC COLLECTION SYSTEM SUITABLE FOR RECYCLING .....

SMART – RVM Unit converts plastic collection into an easy and efficient process, capable of generating benefits...



Proposed SMART RVM Unit Model

# Smart – RVM Unit Proposed basic specifications...



## PROPOSED TECHNICAL DETAILS

CAPACITY	700 - 1000
SPEED	Aprox., 10 units / Min
DISPLAY SCREEN	10cm x 10cm
POWER SUPPLY	220V
DIMENSIONS	100cm X 100cm X 185cm
WEIGHT	Less than 100 kg
COLOUR	Environmental Free



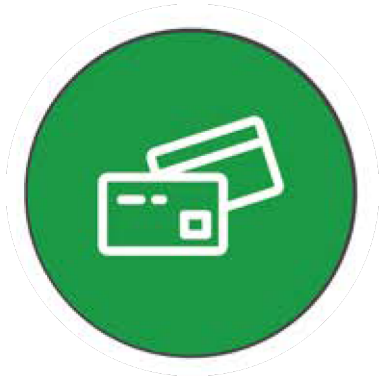
# Proposed Smart – RVM Unit other specifications…

## SMART - RVM FEATURED SPECIFICATIONS:

- SMART - RVM units are featured with deterrent cameras.
- Proposed unit built with simplicity, usage of machine to designed for every age group
- SMART - RVM has display screens covered with 5mm temper glasses
- Look up system against any vandalism
- Various type of pre established reward models
- SMART - RVM has capacity to hold 700-1000 pieces of empty plastic bottles.



# INCENTIVATION BY REWARD SYSTEM



## MAGNETIC CARDS

The use of magnetic cards is a perfect solution for colleges and universities where students usually use these types of cards for their different needs. It can also be used with transport cards. These cards can be programmed according to the client needs.

## TICKET PRINTING / VOUCHER GENERATION

SMART - RVM can be programmed to print vouchers and paper tickets that contain bar codes, gift cards and other types of remuneration. It is a perfect solution for discounting programs in shops and online portals. We can integrate thermal printer on it.



# INCENTIVATION BY REWARD SYSTEM



## CUSTOMIZED REWARDS

It is possible to use the following incentive system, when the user delivers the plastic containers. User also enters his personal data (Identification Documents Number of any relevant).

Afterwards. User can receive money to the remuneration by submitting this identification documents in boxes and specialized organizations.

## PROMOTIONAL MATERIAL

We can configure the devices to deliver gifts directly to users. This model can be very beneficial, if there is ongoing promotions. This method can be preferred by brands that are interested with environmental projects and giving away their branded promotional material.

It is possible to create an economically viable promotion model.





# SMART – RVM functions



SMART – RVM machines appear to resemble vending machines for soft drinks and water. For a special opening. The user introduces into the machine plastic bottles. The machines feature smart cameras, special sensors that can read barcodes or recognition technologies that measure weight, size and materials.

As soon as the object is dropped the receiving unit, the digital recognition system starts to operate. Which evaluates the object and compares it with others already in the device database. If the object is considered to be suitable for recycling. The machine accepts it and stores it in one of the internal compartments specially dedicated to a certain type of material. By compressing the plastic material inside the machine you get extra space for other waste.

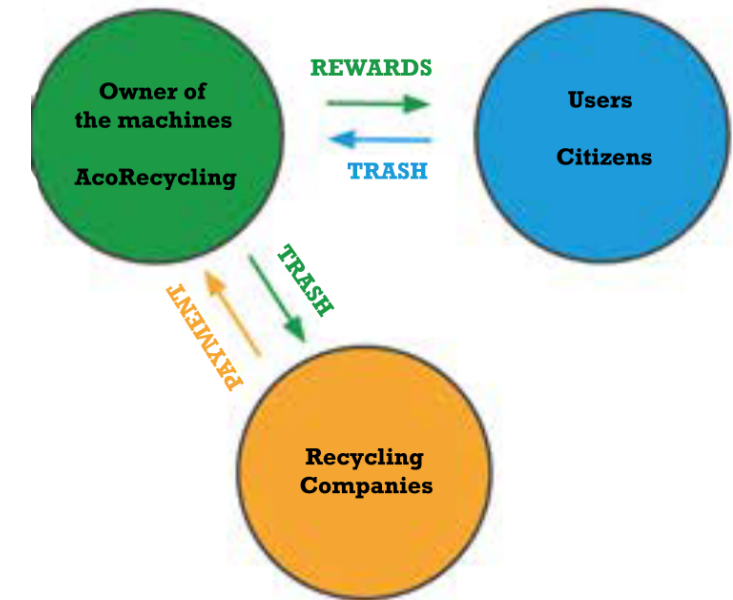


# SMART – RVM Effective System

INNO APPS devices receive the trash of the users offering in return different types depending on the model selected by our customer. Users can receive small amounts of money, credits depends on merchant policy.

For user cards, mobile recharges, store discounts and other types of remunerations. In this way we obtain a stable flow of the materials for the recycling and we contribute to the constant conservation to the surfaces in a clean state.

All materials stored in the equipment can be used for recycling. The sale of classified waste to recycling companies is a perfect solution to monetize projects.





# SMART – RVM Sensors

FILL LEVEL SENSORS, WEIGHT MEASURING SENSORS and LENGTH MEASURING SENSORS;

SMART – RVM Machines can be connected to a system “In the cloud” by using M2M tech with fill level sensors, weight measuring sensors and length measuring sensors. To track live information about current status of bins inside.



# BENEFITS TO ENVIRONMENT



SMART - RVM allow us to receive large amounts of waste for recycling, with almost no cost associated with the collection. This makes the possible collaboration with waste recycle companies very beneficial.

Recycling companies have high expenses in transporting half-empty containers, workers salaries, fuel and vehicles. With the eco recycling equipment the collection of bottles are much easier, since with the computer system we offer you can always see the filling levels of each device. Recycling companies receive classified waste that has been collected at no extra cost.



# PRACTICAL SOLUTION

*SMART - RVM can be installed !*



## CITY CENTERS

CONSERVING THE CITY CENTER IN A CLEAN STATE IS ALWAYS A MAJOR AND COMPLICATED CHALLENGE. OUR SYSTEMS ALLOW US TO ACHIEVE THE OBJECTIVES WITHOUT HIGH LEVELS OF EFFORT. THEY INFLUENCE IN A POSITIVE WAY NOT ONLY IN THE ASPECT OF THE CITY, BUT ALSO IN

THE IMAGE OF THE ADMINISTRATION OF THE CITIES THAT IMPLEMENT THE SYSTEMS



## PARKS

THE PARKS ARE MEETING POINTS OF MANY PEOPLE AND TRADITIONALLY THEY ARE VERY IMPORTANT FOR THE ASPECT OF THE CITIES. IMPLEMENTING PARK CLEANING PROGRAMS CAN BE A VERY POPULAR AND WISE DECISION.



## TRANSPORTATION SPOTS

PUBLIC TRANSPORTATION STOPS RECEIVE HUGE FLOWS OF PEOPLE AND ARE GOOD PLACES TO PICK UP THE TRASH. AN IDEAL SOLUTION IN THIS SENSE WOULD BE THE IMPLEMENTATION OF INCENTIVE PROGRAMS THAT INCLUDE BONUSES FOR CITIZENS' TRANSPORT CARDS IN EXCHANGE FOR THE TRASH RECYCLED BY THESE PEOPLE.



# PRACTICAL SOLUTION

*SMART - RVM can be installed !*



## AIRPORTS AND STATIONS

JUST LIKE PUBLIC TRANSPORT SPOTS, AIRPORTS AND TRAIN STATIONS ATTRACT MANY PEOPLE WHO CAN BECOME USERS OF ACORECYCLING B-1 MACHINES. IT IS POSSIBLE TO DEVELOP SPECIAL INCENTIVE PROGRAMS THAT PROMOTE THE SALE

OF PRODUCTS AND SERVICES WITHIN THE ESTABLISHMENTS BELONGING TO IT.



## SCHOOLS

THE IMPLEMENTATION OF ECOLOGICAL PROGRAMS OF TRASH RECYCLING IN EDUCATIONAL INSTITUTIONS IS AN IMPORTANT POINT IN THE FORMATION OF SOCIAL RESPONSIBILITY OF YOUNG PEOPLE. THE IMPLEMENTED SYSTEMS CAN CARRY SEVERAL TYPES OF INCENTIVES FOR STUDENTS WHO CONTRIBUTE TO THE CLEANLINESS OF THEIR UNIVERSITIES AND COLLEGES.



## SHOPS AND BUSINESS CENTERS

THE SHOPPING CENTERS ARE ANOTHER PERFECT PLACE FOR THE INSTALLATION OF OUR EQUIPMENT. ONE OF THE MODELS THAT ALREADY WORKS: THE DEVICES ARE INSTALLED IN

THE ENTRANCE OF THE SUPERMARKETS AND THE USERS RECEIVE DISCOUNTS FOR THE PURCHASE OF BREAD. IN THE PROCESS OF BUYING, PEOPLE OFTEN ALSO ACQUIRE OTHER THINGS. IN THIS WAY THEY INCREASE THE PROFITS OF THE TRADE

# Thank You

